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June 16, 1980

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Information Unit, Dept. of Health & Env. Sciences, Helena, MT 59601
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Ken Korte, Montana Historical Society, 225 N. Roberts, Helena, MT 59601
Allen & Associates, 611 West Main, Bozeman, MT 59715
Cortland Freeman, C/O Cook-Bell Realty, 611 West Main, Bozeman, MT 59715
Earth Science Services, Inc., 1115 N. 7th Ave., Bozeman, MT 59715
Cook-Bell Realty, 611 West Main, Bozeman, MT 59715
Yellowstone County Health Department, Room 310-311 Courthouse, Billings, MT 59101
Richard Gee, Yellowstone City-County Planning Board, 510 N. 28th St., Billings, MT. 59101
County Commissioners, Courthouse, Billings, MT 59101
County Sheriff, Yellowstone County, Box 1894, Billings, MT 59101
Ken Yerger, Shepherd, MT 59079
Jim Hahn, Atlas Engineers, Inc., 2511 Old Hardin Road, Billings, MT 59101
Shepherd School District 37, Sheperd, MT 59079
Water Quality Bureau, DHES, 3302 2nd Ave. N., Billings, MT 59101
Yellowstone Valley Electric Coop, P. O. Box 8, Huntley, MT 59037
O'Donnell Fire Service, 2401 2nd Ave. N., Billings, MT 59101

PLEASE RETURN

RE: Fossil Rock Subdivision
Yellowstone County

Ladies and Gentlemen:

The enclosed prelimary environmental review has been prepared for Fossil Rock Subdivision in Yellowstone County, and is submitted for your consideration. Questions and comments will be accepted until July 1, 1980. One extension of time not to exceed seven days will be granted upon request if there is sufficient reason for the request. All comments should be sent to the undersigned.

Sincerely,

Edward W. Casne, P.E., Chief
Subdivision Bureau
Environmental Sciences Division

EWC/JCM/jjg

Enc.

DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES
Cogswell Building, Helena, Montana 59601
(406)449-3946

PRELIMINARY ENVIRONMENTAL REVIEW

Division/Bureau Environmental Sciences/Subdivision

Project or Application Fossil Rock Subdivision

Description of Project 46 single-family residential lots are proposed for 129.796 acres of land currently used for agricultural purposes. 2 common areas will be provided totaling 21.767 acres. Water will be supplied by individual cisterns and sewage disposal by individual septic tanks and drainfields. Some of the individual sewage disposal units will be deemed experimental. The minimum lot size will be 1.0 acre with a maximum size of 4.892 acres.

POTENTIAL IMPACT ON PHYSICAL ENVIRONMENT

	Major	Moderate	Minor	None	Unknown	Comments on Attached Pages
1. Terrestrial & aquatic life and habitats		X				*
2. Water quality, quantity and distribution			X			*
3. Geology & soil quality, stability and moisture			X			*
4. Vegetation cover, quantity and quality			X			*
5. Aesthetics			X			*
6. Air quality			X			*
7. Unique, endangered, fragile, or limited environmental resources				X		
8. Demands on environmental resources of land, water, air & energy		X				*
9. Historical and archaeological sites					X	

POTENTIAL IMPACTS ON HUMAN ENVIRONMENT

	Major	Moderate	Minor	None	Unknown	Comments on Attached Pages
1. Social structures and mores			X			
2. Cultural uniqueness and diversity				X		
3. Local and state tax base & tax revenue		X				*
4. Agricultural or industrial production			X			*
5. Human health				X		
6. Quantity and distribution of community and personal income			X			*
7. Access to and quality of recreational and wilderness activities				X		*
8. Quantity and distribution of employment			X			
9. Distribution and density of population and housing			X			*
10. Demands for government services	X					*
11. Industrial & commercial activity			X			
12. Demands for energy		X				*
13. Locally adopted environmental plans & goals			X			*
14. Transportation networks & traffic flows			X			*

Other groups or agencies contacted or which may have overlapping jurisdiction Dept. of Fish, Wildlife and Parks; Dept. of Highways; Montana Bureau of Mines and Geology; Billings - Yellowstone City-County Planning Board; O'Donnell Fire Service; Yellowstone Valley Electric Coop; Yellowstone County Undersheriff; Sheperd School District 37; Atlas Engineers, Inc.; Water Quality Bureau, DHES.

Recommendation concerning preparation of EIS Recommend against preparation of an EIS

PER Prepared by: James C. McCauley

Date: June 5, 1980

DHES/ESD-2

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Physical Environment

1. Stormwater drainage from the subdivision will enter Crooked Creek and an unnamed tributary that eventually flows into Crooked Creek approximately 1/2 mile downstream of the subdivision. According to the ES. 91 application prepared by Mr. Hahn, Crooked Creek drains an area of approximately 75,000 acres. Its normal flow channel is nearly 5 feet wide and 3 feet deep. Storm drainage flows are split into 10 localized areas from which stormwater is routed via grasslined swales to both Crooked Creek and the proposed lake south of the subdivision which will be created by daming of the unnamed creek. Due to distance and gentle slopes very little sediment or other contaminants should reach state waters. However, some sediment and lawn fertilizer from the residential lots may reach Crooked Creek during severe storms.

Duane Klarich of the Department of Health and Environmental Sciences, Water Quality Bureau regional office in Billings has sampled Crooked Creek. The grab sample was taken during a period of increased runoff following local rainstorms. The pH was found to be 8.02 with a dissolved oxygen content of 7.78. Specific conductance measured at 25°C was 2055 and turbidity was 140 JTU with a flow rate of approximately 23 cfs. This data indicates a somewhat poor quality of water exists which could become even worse during periods of low flow.

Charles Eustace of Montana Department of Fish and Game reported by telephone that Fossil Rock lies within a wintering area for both antelope and deer. The area may be especially important to antelope. Also sage grouse and pheasants inhabit this area along with various small mamals such as rabbit, rodents, etc. Clint Bishop commented that Crooked Creek is not considered an essential fishing stream so the subdivision should have little impact. Problems could arise if contaminants released into Crooked Creek reached the Yellowstone River approximately 12 miles downstream.

2. The water quality of Crooked Creek should not be altered by properly treated stormwater. However, highly turbid, nutrient ladened stormwater would hamper any attempts to improve water quality in this drainage area. Drainage plans and erosion or runoff prevention proposals have been submitted to this Department. Approval of these plans is required for final approval by DHES.

Neither conventional nor experimental septic systems should present a groundwater pollution problem for this area since test data shows no bedrock or groundwater to a depth of at least 10 feet. Independent tests conducted by Northern Testing Laboratories, Inc. confirm these findings and indicate the water table is in excess of 20 feet.

Individual cisterns will be used for domestic water supply due to the poor quality of existing aquifers. Therefore, groundwater supplies and recharge areas will not be affected by the proposed subdivision. Existing irrigation ditches will be relocated and maintained for the purpose of watering lawns.

3. According to the Montana Bureau of Mines and Geology, the Billings region is in the Seismic Zone 1, where minor earthquake damage can occur. However, the region has been seismically inactive during recent time and no problems associated with geologic hazards are expected. Suitable building sites have been selected so that vertical stream banks will not pose a hazard.

With the exception of a few lots, soils underlying this subdivision have been rated severe by Soil Conservation Service standards for septic tank drainfield installations because of very slow infiltration rates for the soils. Extensive on-site testing has been conducted by the consultant in order to pinpoint exact locations for drainfields. Minimum distances as required by DHES regulations will be maintained to irrigation ditches and flood-prone areas. The soil types as classified by Atlas Engineers according to the USDA system are clay, clay loam, silty clay loam, and silty loam all of which are described as being of low bearing capacity or having shrink-swell potential. Problems should not be encountered as long as caution is exercised with respect to footings, foundation, and graded slopes. The consultant has proposed the use of four evapo/transpiration systems in the cases where acceptable percolation tests have not been found. They are to be located on Lot 2, Block 1; Lot 3, Block 3; Lot 8, Block 4; and possibly Lot 7, Block 4.

4. Present vegetation consists of mainly sagebrush and natural grasses with the exception of a 25 acre alfalfa plot. Vegetation is lacking on a few severe slopes that have been subject to erosion. Native grasses will be removed as construction proceeds and replaced by domestic lawns, trees and shrubbery. Hopefully, as houses are occupied ground cover will be intensified thus halting further erosion. There are no known critical plant communities in this area.

5. No area of significant natural beauty will be altered by this development. In fact, the development of lawns and planting of trees should improve the aesthetics. If the proposed lake and parks are developed as planned a pleasant community should evolve.

6. Dust levels will rise significantly during the construction of roads, utilities and homes. Although neighboring residents may be effected, the area is sparcely populated at present. As homes are completed and lawns planted, particulate levels will drop. Since roads will be gravel based, fugitive dust levels should remain above pre-development levels.

8. Homeowners in Fossil Rock will consume more gasoline commuting to jobs and shopping centers than will residents of Billings central district. Well insulated homes would use the same or less energy than existing homes. However, some experts estimate that from an energy stand point it is wiser to renovate existing homes in urban areas. County planner Richard Gee feels that a demand exists in the Billings area for rural homesites. Whatever the potential for renovation of existing homes or new urban construction, it appears that future demand will exceed these two alternatives.

Human Environment

3. Based on information obtained from Atlas Engineers' environmental assessment, the 160 acres of grazing land and 20 acres of surburban tracts now generate about $190.00 of property tax revenue annually. Upon subdivision the total development will generate approximately $60,000.00 annually based on present mill levies.

4. The proposed subdivision will remove 25 acres of irrigated hay from production. The productivity of the irrigated land is limited since it is Class IV soil according to USDA Soils Survey. Salinity and alkalinity limit both the hay and dryland pasture in their production capabilities.

6. The growth of rural or suburban areas may result in a shift of community and personal income from urban centers to outlying areas. Therefore, this shift may bring about a decline in urban tax base due to business decay.

7. There is no direct assess to public lands through the subdivision. A 21 acre plus natural park and lake is being dedicated for the recreational use of residents of Fossil Rock.

9. See comment #6 under "Potential Impacts on Human Environment".

10. In a telephone conversation, Mike Schafer, Yellowstone County Undersheriff, stated that present manpower is not adequate to cover the rapid development of Yellowstone County.

The subdivision is not located in a rural fire district although Shepherd's volunteer fire department is located just 3 miles east of Fossil Rock. Private fire protection can be provided by O'Donnell Fire Service for a fee. Their nearest station is located on the Huntley road about 1 1/2 miles past the Roundup intersection. Due to distance, response time would be approximately 25 - 30 minutes.

Joseph Spivey, principal of Shepherd Elementary school commented by telephone on the influx of new students into the area. Since the population of School District 37 is growing rapidly, the addition of 30 to 90 students as estimated by Atlas Engineers would cause overcrowding unless further expansion of facilities is contemplated.

12. Electrical power may be supplied by the Yellowstone Valley Electrical Coop, Inc.

13. In conversation with Richard Gee of the Billings - Yellowstone City-County Planning Board, it was stated that a need exists for rural properties of this type. Due to rapid development of Billings and surrounding areas, single family housing is in great demand.

14. In a letter dated May 17, 1979 Wayne Speelman of the Montana Department of Highways made the following comment:

> "Both the county road and Highway 87 should have the capacity at the present time for the additional 500 ADT estimated to be generated by this subdivision. However, this portion of Highway 87 is rated low in safety and capacity and continued development in this area will further the need to improve this highway."